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10/609,257	06/27/2003	Peiya Liu	2003P09355US	7769

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EXAMINER

PADMANABHAN, KAVITA

ART UNIT

PAPER NUMBER

2161

DATE MAILED: 01/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/609,257	LIU ET AL.	
	Examiner	Art Unit	
	Kavita Padmanabhan	2161	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 June 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-40 are pending and have been examined.
2. Claims 1-40 are rejected.

Drawings

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the query system recited in claims 1-38 and the method steps recited in claims 39-40 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner,

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the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

4. **Claims 6, 26, 29, 31, and 39** are objected to because of the following informalities:

In regards to **claim 6**, the word --wherein-- should be added before the word "said" at line 3 of the claim.

In regards to **claim 26**, the period should be deleted at line 1 of the claim.

In regards to **claim 29**, the word "said" should be deleted before the word "by" at line 2 of the claim.

In regards to **claim 31**, the period should be deleted before the word "multimedia" at the last line of the claim.

In regards to **claim 39**, the repeated word "for" should be deleted at line 1 of the claim.

Appropriate correction is required.

5. Applicant is advised that should claims 6 and 10 be found allowable, **claims 15 and 16**, respectively, will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim Rejections - 35 USC § 101

6. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

7. **Claims 1-26 and 31-39** are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 1-26 and 31-39 appear to be directed towards abstract ideas and do not appear to produce a useful, concrete and tangible result.

The examiner will apply prior art to these claims as best understood, with the assumption that applicant will amend to overcome the stated 101 rejections.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. **Claims 1-40** are rejected under 35 U.S.C. 102(b) as being anticipated by **Liu et al., “Queries of Digital Content Descriptions in MPEG-7 and MPEG-21 XML documents,” pages 1-13, XML Europe 2002, May 22, 2002** (hereinafter “Liu”).

In regards to **claim 1**, Liu teaches a query system for structured multimedia content retrieval, said system including:

- a query language having query constructs and formalisms for specifying characteristics of extensible markup language (XML) documents for retrieval **(Liu; Section 1, Introduction, paragraph 3, lines 1-8); and**
- wherein said characteristics include spatial, temporal, and visual datatypes **(Liu; Section 1, Introduction, paragraph 1, lines 4-5; Introduction, paragraph 3, lines 7-8).**

In regards to **claim 2**, Liu teaches a query system as recited in claim 1, wherein said query language includes:

means for resolving intensional data and relationships arising from any of (Liu;

Section 3.1, Predicate-based Query Specifications, paragraph 1, lines 1-11):

(a) XML datatype mechanism (Liu; **Section 3, Query Specification Issues in MPEG-7 and MPEG-21, bullet 1, lines 3-5, bullet 2, lines 4-5; Section 3.1, Predicate-based Query Specifications, paragraph 1, lines 1-2);**

(b) irregular XML structures (Liu; **Section 3, Query Specification Issues in MPEG-7 and MPEG-21, bullet 2, lines 1-2; Section 3.1, Predicate-based Query Specifications, paragraph 1, lines 1-2);** and

(c) co-occurrence constraints (Liu; **Section 3, Query Specification Issues in MPEG-7 and MPEG-21, bullet 3, lines 1-2; Section 3.1, Predicate-based Query Specifications, paragraph 1, lines 1-2).**

In regards to **claim 3**, Liu teaches a query system as recited in claim 2, wherein said means for resolving comprises a logic formalism for supporting queries on XML documents with any of (Liu; **Section 3.1, Predicate-based Query Specifications, paragraph 1, lines 1-11):**

(A) intensional data and relationships (Liu; **Section 3, Query Specification Issues in MPEG-7 and MPEG-21, bullet 1, line 1; Section 3.1, Predicate-based Query Specifications, paragraph 1, lines 1-2);**

(B) irregular document structures (Liu; **Section 3, Query Specification Issues in MPEG-7 and MPEG-21, bullet 2, lines 1-2; Section 3.1, Predicate-based Query Specifications, paragraph 1, lines 1-2);** and

(C) and co-occurrence constraints (**Liu; Section 3, Query Specification Issues in MPEG-7 and MPEG-21, bullet 3, line 1; Section 3.1, Predicate-based Query Specifications, paragraph 1, lines 1-2).**

In regards to **claim 4**, **Liu** teaches a query system as recited in claim 1, wherein said query language includes means for identifying specification issues in XML query language for XML document retrieval (**Liu; Section 3, Query Specification Issues in MPEG-7 and MPEG-21, paragraph 1, lines 1-3; Section 3.1, Predicate-based Query Specifications, paragraph 1, lines 1-2).**

In regards to **claim 5**, **Liu** teaches a query system as recited in claim 1, wherein said query language includes means for identifying specification issues in XML query language for MPEG-7 document retrieval (**Liu; Section 2.2, Spatial and Temporal Datatypes, paragraph 2, lines 1-2; Section 3, Query Specification Issues in MPEG-7 and MPEG-21, paragraph 1, lines 1-3; Section 3.1, Predicate-based Query Specifications, paragraph 1, lines 1-2).**

In regards to **claim 6**, **Liu** teaches a query system for structured multimedia content retrieval, said system including:

a query language based on logic formalism for content retrieval (**Liu; Section 1, Introduction, paragraph 3, lines 1-8); and**

said logic formalism including atomic logic formulas, said atomic logic formulas being element predicates in a relational calculus (**Liu; Section 1, Introduction, paragraph 3, lines 1-8**).

In regards to **claim 7**, **Liu** teaches a query system as recited in claim 6, wherein said query language comprises query constructs and formalisms for specifying different aspects of extensible markup language (XML) documents (**Liu; Section 1, Introduction, paragraph 3, lines 1-8**).

In regards to **claim 8**, **Liu** teaches a query system as recited in claim 7, wherein said query constructs and formalisms are adapted for spatial, temporal and visual datatypes (**Liu; Section 1, Introduction, paragraph 1, lines 4-5; Introduction, paragraph 3, lines 7-8**).

In regards to **claim 9**, **Liu** teaches a query system as recited in claim 7, wherein said query constructs and formalisms are adapted for spatial, temporal and visual datatypes in MPEG-7 documents (**Liu; Section 1, Introduction, paragraph 1, lines 4-5; Introduction, paragraph 3, lines 7-8**).

In regards to **claim 10**, **Liu** teaches a query system as recited in claim 6, wherein:

queries in said relational calculus are equivalent to a proof-finding process (**Liu; Section 3.1, Predicate-based Query Specifications, paragraph 1, lines 1-11, paragraph 3, lines 8-9**); and

said proof-finding process comprises finding all proofs to existential closure of logical assertions in the form of path predicates required to be satisfied by tree document elements (**Liu; Section 3.1, Predicate-based Query Specifications, paragraph 1, lines 1-11, paragraph 3, lines 8-9**).

In regards to **claim 11**, **Liu** teaches a query system as recited in claim 7, wherein spatial, temporal and visual datatypes and relationships are described in said logic formalism for content retrieval (**Liu; Section 1, Introduction, paragraph 3, lines 1-8**).

Claims 12, 13, and 14 are rejected with the same rationale given for claims 2, 4, and 5, respectively.

Claims 15, 16, 17, 18, 19, and 20 are rejected with the same rationale given for claims 6, 10, 11, 12, 13, and 14, respectively.

In regards to **claim 21**, **Liu** teaches a query system for structured multimedia content retrieval, said system including:

- a query language based on logic formalism for content retrieval (**Liu; Section 1, Introduction, paragraph 3, lines 1-8**);

- said logic formalism including atomic logic formulas, said atomic logic formulas being element predicates in a relational calculus (**Liu; Section 1, Introduction, paragraph 3, lines 1-8**);
- means for identifying given specifications of multimedia XML documents in MPEG-7 XML query specifications (**Liu; Section 1, Introduction, paragraph 3, lines 1-8; Section 3.1, Predicate-based Query Specifications, paragraph 1, lines 1-11**); and
- means for applying said logic formalism for processing said given specifications for specifying spatial and temporal relationships pertaining to said XML documents to support MPEG-7 XML document retrieval and modification of multimedia XML documents (**Liu; Section 1, Introduction, paragraph 3, lines 1-8; Section 3.1, Predicate-based Query Specifications, paragraph 3, line 1; Section 4, MPEG-7 and MPEG-21 Structured Queries, paragraph 1, line 3 – paragraph 2, line 3**).

In regards to **claim 22**, Liu teaches a query system in accordance with claim 21, wherein said given specifications include intensional data and relationships specifications, document addressing specifications, and co-occurrence constraints specifications (**Liu; Section 3, Query Specification Issues in MPEG-7 and MPEG-21, bullets 1, 2, and 3; Section 3.1, Predicate-based Query Specifications, paragraph 1, lines 1-2**).

In regards to **claim 23**, Liu teaches a query system in accordance with claim 21, wherein said given specifications include element datatypes (Liu; **Section 3, Query Specification Issues in MPEG-7 and MPEG-21, bullet 1, lines 3-5; Section 3.1, Predicate-based Query Specifications, paragraph 1, lines 1-11**).

In regards to **claim 24**, Liu teaches a query system in accordance with claim 23, wherein spatial and temporal relationships are derived from said element datatypes (Liu; **Section 2.2, Spatial and Temporal Datatypes, paragraph 1, lines 1-8**).

In regards to **claim 25**, Liu teaches a query system in accordance with claim 24, wherein spatial and temporal relationships are further included in said given specifications as a complex datatype for multimedia XML documents (Liu; **Section 2.2, Spatial and Temporal Datatypes, paragraph 1, lines 1-8**).

In regards to **claim 26**, Liu teaches a query system in accordance with claim 23, wherein said datatypes include:

(A) Mpeg7Type, basic datatypes, reference datatypes, unique identifier datatypes, and time datatypes (Liu; **Section 2.2, Spatial and Temporal Datatypes, paragraph 3, lines 1-2**);

(B) MPEG-7 visual datatypes used to specify visual properties of multimedia objects, including spatial, color, texture, motion, location (Liu; **Section 2.2, Spatial and Temporal Datatypes, paragraph 5, lines 1-2**); and

(C) MPEG-7 audio datatypes are used to specify audio content (**Liu; Section 2.2, Spatial and Temporal Datatypes, paragraph 6, line 1**).

In regards to **claim 27**, **Liu** teaches a query system in accordance with **claim 21**, including a tool for generating a description from a video based on a scene change technique (**Liu; Section 2.1, MPEG-7 XML Documents for Multimedia Content Descriptions, paragraph 4, lines 1-2**), said tool including processing means for:

(a) breaking down the video temporally into scenes or shots using scene change detection algorithms that can detect both abrupt as well as gradual changes (**Liu; Section 2.1, MPEG-7 XML Documents for Multimedia Content Descriptions, paragraph 4, lines 2-3**);

(b) outlining user-identified objects of interest within said scenes (**Liu; Section 2.1, MPEG-7 XML Documents for Multimedia Content Descriptions, paragraph 4, lines 3-4**);

(c) tracking said user-identified objects (**Liu; Section 2.1, MPEG-7 XML Documents for Multimedia Content Descriptions, paragraph 4, line 4**);

(d) creating a node point where a significant motion change wherein a linear mode is inadequate (**Liu; Section 2.1, MPEG-7 XML Documents for Multimedia Content Descriptions, paragraph 4, lines 4-5**);

(e) providing the specification of said user-identified objects as any of temporal, audio, and visual datatypes (**Liu; Section 2.1, MPEG-7 XML Documents for Multimedia Content Descriptions, Figure 2, paragraph 3**); and

(f) providing a description of said user-defined objects as any of spatial, temporal and visual datatypes (**Liu; Section 2.1, MPEG-7 XML Documents for Multimedia Content Descriptions, Figure 2, paragraph 3; Section 2.2, Spatial and Temporal Datatypes, paragraph 1, lines 1-2).**

In regards to **claim 28**, Liu teaches a query system in accordance with claim 27, wherein processing means provides said tracking said user-identified objects in a semi-automatic manner (**Liu; Section 2.1, MPEG-7 XML Documents for Multimedia Content Descriptions, paragraph 4, line 4).**

In regards to **claim 29**, Liu teaches a query system in accordance with claim 27, wherein processing means provides said description of said user-defined objects said by the use of abstract datatype techniques (ADT) (**Liu; Section 2.2, Spatial and Temporal Datatypes, paragraph 1, lines 1-2).**

In regards to **claim 30**, Liu teaches a query system in accordance with claim 27, wherein processing means provides said respective datatypes as composite datatypes constructed from more primitive ones (**Liu; Section 2.2, Spatial and Temporal Datatypes, paragraph 1, lines 2-3).**

In regards to **claim 31**, Liu teaches a query system for multimedia content retrieval, said system including:

- a query language based on logic formalism for content retrieval, said logic formalism being hereinafter referred to as Path Predicate Calculus and being utilized for logic-based queries and manipulations (**Liu; Section 1, Introduction, paragraph 3, lines 1-8; Section 3.1, Predicate-based Query Specifications, paragraph 1, lines 1-11, paragraph 3, line 1**);
- said Path Predicate Calculus including atomic logic formulas, said atomic logic formulas being element predicates in a relational calculus and comprising element predicates and path predicates, for asserting logical truth statements about document elements in a document tree (**Liu; Section 1, Introduction, paragraph 3, lines 1-8; Section 3.1, Predicate-based Query Specifications, paragraph 1, lines 1-11**);
- means for identifying given specifications of multimedia XML documents in MPEG-7 XML query specifications (**Liu; Section 1, Introduction, paragraph 3, lines 1-8; Section 3.1, Predicate-based Query Specifications, paragraph 1, lines 1-11**); and
- means for applying said logic formalism for processing said given specifications for specifying spatial and temporal relationships pertaining to said XML documents to support MPEG-7 XML document retrieval and modification. multimedia XML documents (**Liu; Section 1, Introduction, paragraph 3, lines 1-8; Section 3.1, Predicate-based Query Specifications, paragraph 3, line 1; Section 4, MPEG-7 and MPEG-21 Structured Queries, paragraph 1, line 3 – paragraph 2, line 3**).

Claims 32, 33, 34, and 35 are rejected with the same rationale given for claims 10, 11, 12, and 13, respectively.

In regards to **claim 36**, **Liu** teaches a query system for structured multimedia content retrieval, said system including:

- a query language based on logic formalism for content retrieval, said language including query constructs and formalisms for specifying different aspects of XML documents (**Liu; Section 1, Introduction, paragraph 3, lines 1-8**); and
- wherein said constructs and formalisms are particularly adapted for spatial, temporal and visual datatypes (**Liu; Section 1, Introduction, paragraph 1, lines 4-5; Introduction, paragraph 3, lines 7-8**).

In regards to **claim 37**, **Liu** teaches a query system as recited in claim 36, wherein said query language (**Liu; Section 3.1, Predicate-based Query Specifications, paragraph 1, lines 1-11**) identifies intensional data and relationships due to XML datatype mechanisms (**Liu; Section 3, Query Specification Issues in MPEG-7 and MPEG-21, bullet 1, lines 3-5, bullet 2, lines 4-5; Section 3.1, Predicate-based Query Specifications, paragraph 1, lines 1-2**), irregular XML structures (**Liu; Section 3, Query Specification Issues in MPEG-7 and MPEG-21, bullet 2, lines 1-2; Section 3.1, Predicate-based Query Specifications, paragraph 1, lines 1-2**), and co-occurrence constraints (**Liu; Section 3, Query Specification Issues in MPEG-7 and**

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MPEG-21, bullet 3, lines 1-2; Section 3.1, Predicate-based Query Specifications, paragraph 1, lines 1-2) for document retrieval.

In regards to **claim 38**, Liu teaches a query system as recited in claim 37, wherein said query language is specially adapted for MPEG-7 documents (**Liu; Section 1, Introduction, paragraph 3, lines 1-8; Section 3.1, Predicate-based Query Specifications, paragraph 2, line 1**).

Claims 39 and 40 are rejected with the same rationale given for claims 21 and 27, respectively.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Kavita Padmanabhan** whose telephone number is **571-272-8352**. The examiner can normally be reached on Monday-Friday, 9:00am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Safet Metjahic can be reached on 571-272-4023. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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December 30, 2005

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